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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,762	04/07/2000	Shannon Mary Nelson	NORTH-390A/A-2241	9968
7663	7590	04/05/2005	EXAMINER	
STETINA BRUNDA GARRED & BRUCKER			SEDIGHIAN, REZA	
75 ENTERPRISE, SUITE 250				
ALISO VIEJO, CA 92656			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/544,762

Applicant(s)

NELSON ET AL.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Appeal Brief of 1/21/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-13,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-13,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. In view of the Appeal Brief filed on 1/21/2005, PROSECUTION IS HEREBY REOPENED. A new office action is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-6, 8-9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. (US patent No: 6,650,844).

Regarding claims 1, 5, 8, and 15, Davies teaches a communication system for operatively interconnecting circuit cards (24, 26, 28, 30, fig. 1) within a computer system (col. 1, lines 17-25) to enable data to be transmitted and received therebetween (col. 2, lines 30-50), comprising: a common backplane (14, fig. 1) having a plurality of circuit card connectors (col. 4, lines 32-34) disposed in spaced apart relation thereon for supporting circuit cards in a generally upright

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parallel relationship (col. 4, lines 33-53); a plurality of circuit cards (24, 26, 28, 30, fig. 1) each being mounted to one of the circuit card connectors (col. 4, lines 33-35) and each having a transmitter LED (40, 48, fig. 1 and col. 4, lines 54-55, col. 5, lines 9-10) and a receiver photodiode formed thereon (42, 46, fig. 1); a plurality of optical pathways (44, 36, fig. 1) formed solely through air (col. 2, lines 43-49) between the circuit cards, the optical pathways forming a plurality of independent optical connections (44, 36, fig. 1) between the transmitter LED (40, fig. 1) on one of the circuit cards (24, fig. 1) and the receiver photodiode (46, fig. 1) on any one of circuit cards (26, fig. 1); and wherein the circuit cards are maintained in fixed relationship to one another via the common backplane to maintain continuous optical intercard communications between each of the circuit cards such that the LED on each circuit card is operative to generate and transmit a signal and the photodiode of one corresponding circuit card is operative to receive the signal through the corresponding optical pathway (col. 4, lines 54-67, col. 5, lines 1-15).

Davies differs from the claimed invention in that Davies does not specifically disclose the system is a shock-resistant system. However, it is well known and it is obvious that the circuit boards with electrical and optical components such as the ones of Davies can be housed within a shock-resistant housing to provide safety and protection for the circuit components and for the users.

Regarding claims 2 and 9, Davies discloses optically transmitted infrared radiation (col. 2, lines 30-31).

Regarding claims 6 and 13, Davies discloses the first and second circuit cards are operative to run an embedded application (it is obvious and well known that circuit boards such as the ones of Davies can be used within a computer system to run an embedded application).

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4. Claims 3-4 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. (US patent No: 6,650,844) in view of Gehrke et al. (US patent No: 6,310,992).

Regarding claims 3-4 and 10-11, Davies does not specifically disclose the transmission and reception signals comprise a standardized infrared communication scheme protocol that is developed by the infrared data association. However, Gehrke teaches a plurality of electro-optic modules (102, 104, figs. 1, 4 and col. 3, lines 60-67, col. 4, lines 1-9) with optical transmitters (204, 304, fig. 4) and receivers (202, 302, fig. 4), wherein the optical transmitters and receivers are IrDA devices (col. 4, lines 5-6). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate IrDA optical transmitters and receivers such as the ones of Gehrke for the optical transmitters and receivers in the optical communication systems of Davies in order to provide a reliable and high data rate transmission system.

Regarding claim 12, Davies discloses the circuit cards are operative to run an embedded application (it is obvious and well known that circuit boards such as the ones of Davies can be used within a computer system to run an embedded application).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. (US patent No: 6,650,844) in view of Mizzi (US patent No: 4,545,023).

Regarding claim 16, Davies differs from the claimed invention in that Davies does not specifically disclose the computer system includes a hand-held data collection device. Mizzi teaches a handheld computer that comprises of circuit cards (col. 1, lines 6-10). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a plurality of

electro-optical circuit cards such as the ones of Davies within a handheld computer, as it is taught by Mizzi, in order to provide a compact and movable optical data transmission system.

6. Claims 1-2, 5-6, 8-9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US patent No: 6,038,355) in view of Jokerst et al. (US patent No: 5,280,184).

Regarding claims 1, 5, 8, and 15, Bishop teaches a communication system for interconnecting circuit cards (14, 16, 18, fig. 1) within a computer system (col. 3, lines 4-7, col. 6, lines 19-25) to enable data to be transmitted and received therebetween (col. 3, lines 25-52, col. 6, line 21), comprising: a common backplane (12, fig. 1) having a plurality of circuit card connectors (20, fig. 1) disposed in spaced apart relation thereon for supporting circuit cards in a generally upright parallel relationship (col. 3, lines 25-31); a plurality of circuit cards (14, 16, 18, fig. 1) each being mounted to one of the circuit card connectors (20, fig. 1) and each having an optical interface (30, figs. 1, 2) which comprises of a transmitter LED (col. 6, line 25 and 30, fig. 1 and 30, 34, fig. 2) and a receiver photodiode (30, fig. 1 and 30, 58, fig. 2); a plurality of optical pathways (62, 64, fig. 1) formed between the circuit cards, the optical pathways forming a plurality of independent optical connections between a transmitter LED on one of the circuit cards and the receiver photodiode on the other circuit cards (col. 4, lines 20-28); and wherein the circuit cards are maintained in fixed relationship to one another via the common backplane (12, fig. 1) to maintain continuous optical intercard communications between each of the circuit cards such that the transmitter on each circuit card is operative to generate and transmit a signal and the photodiode receiver of one corresponding circuit card is operative to receive the signal

through the corresponding optical pathway (col. 3, lines 40-67, col. 4, lines 1-3). Bishop differs from the claimed invention in that Bishop does not disclose the optical pathways formed solely through air between the circuit cards. Jokerst teaches an optical interconnection between integrated circuits (12, 14, fig. 1), wherein optical interconnection is formed solely through air (col. 6, lines 44-47, col. 7, lines 31-46). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate optical interface devices that communicate through air such as the ones of Jokerst for the optical interface circuits in the communication system of Bishop in order to provide a wireless optical communication system and to easily repair or remove each of the circuit boards. The modified optical communication system of Bishop and Jokerst further differs from the claimed invention in that Bishop and Jokerst do not disclose the system is a shock-resistant system. However, it is well known and obvious that electrical and optical components such as the ones of Bishop can be housed within shock-resistant housing to provide safety and protection. As to claim 8 and 15, Jokerst teaches a pair of first LED and photodiode (E/D, 24, fig. 1) and a second pair of LED and photodiode (E/D, 26, fig. 1), respectively, formed on integrated circuits (12, 14, fig. 1) to generate and transmit infrared signals to carry data between them (col. 7, lines 40-46), wherein a first optical pathway formed between the first LED and the second photodiode, and a second pathway formed between the second LED and the first photodiode (col. 7, lines 44-45).

Regarding claims 2 and 9, Bishop discloses optically transmitted infrared radiation (col. 6, line 24-26).

Regarding claims 6 and 13, Bishop discloses the first and second circuit cards are operative to run an embedded application (col. 6, lines 20-25, it is obvious and well known that

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circuit boards such as the ones of Bishop can be used within a computer system to run an embedded application).

7. Claims 3-4 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US patent No: 6,038,355) in view of Jokerst et al. (US patent No: 5,280,184) and in further view of Croft et al. (US Patent No: 5,864,708).

Regarding claims 3-4 and 10-11, the modified communication system of Bishop and Jokerst differs from the claimed invention in that Bishop and Jokerst do not specifically disclose the transmission and reception signals comprise a standardized infrared communication scheme protocol that is developed by the infrared data association. However, Bishop teaches the optical communications are sent by Asynchronous Transfer Mode (ATM) protocol (e.g. SONET IOC-3 or OC-12), or other protocols (col. 6, lines 23-25). Croft discloses wireless transceivers (63, 64, fig. 1) that communicate with each other by using Infrared Data Association standard protocol (col. 3, lines 5-14). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate Infrared Data Association standards or protocols such as the one disclosed by Croft for the optical data transmission and reception in the modified optical communication systems of Bishop and Jokerst in order to provide a reliable method of data transmission by implementing a standard Infrared protocol to detect transmission errors and to avoid interference and collisions.

Regarding claim 12, Bishop the circuit cards are operative to run an embedded application (col. 1, lines 64-67, col. 2, lines 1-8, col. 6, lines 19-22).



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8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US patent No: 6,038,355) in view of Jokerst et al. (US patent No: 5,280,184) and in further view of Cargin, Jr. et al. (US Patent No: 6,023,147).

Regarding claim 16, Bishop discloses the boards are personal computer based communication switching boards (col. 6, lines 19-22). The modified communication system of Bishop and Jokerst differs from the claimed invention in that Bishop and Jokerst do not specifically disclose the computer system includes a hand-held data collection device. Cargin discloses a hand-held data collection device (col. 3, lines 55-60 and 10, fig. 1) that includes a plurality of circuit cards (col. 10, lines 22-29). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a plurality of interconnected optical circuit cards such as the ones of Bishop within a computer system as it is disclosed by Bishop, or within a data collection device, as it is taught by Cargin, to provide a high speed optical data transmission between sub-system elements of the computer system, or a hand-held device to increase the transmission bandwidth.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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